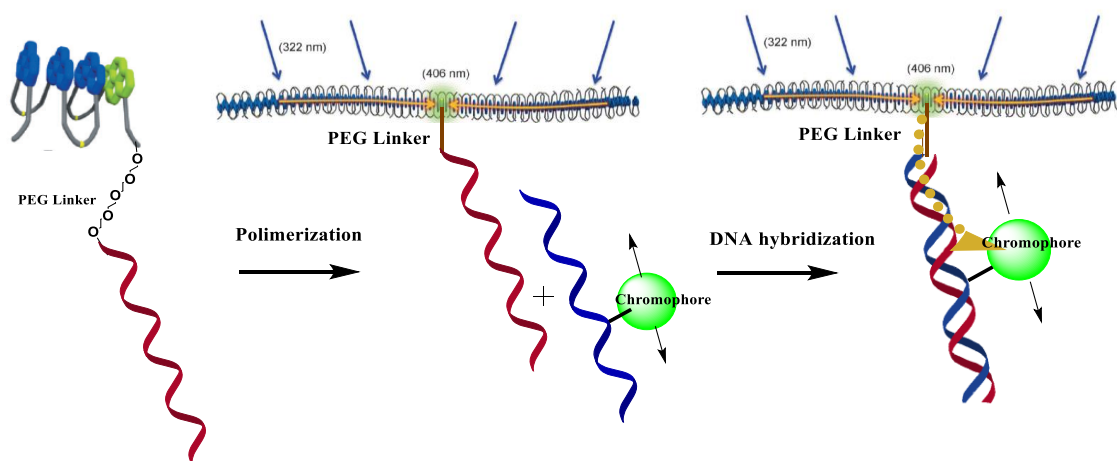


# ASSEMBLY OF LIGHT HARVESTING ANTENNAS THROUGH SUPRAMOLECULAR POLYMERIZATION OF AMPHIPHILIC PHENANTHRENE OLIGOMERS

M. Kownacki, S. M. Langenegger<sup>a</sup>, R. Häner<sup>a</sup>

<sup>a</sup>Department of Chemistry and Biochemistry, University of Bern,  
Freiestrasse 3, CH-3012 Bern, Switzerland  
([mariusz.kownacki@dcb.unibe.ch](mailto:mariusz.kownacki@dcb.unibe.ch))

Efficient artificial light-harvesting antennas composed of multichromophoric array in a DNA scaffold are nowadays a key aspect in the supramolecular photochemistry [1]. Recently it was reported that the phenanthrene-pyrene supramolecular polymers can efficiently absorb photons which are transferred to the pyrene collection centre [2]. To expand this idea, 3,6-dialkynylphenanthrene trimer and new pyrene related oligomers were synthesized. As the DNA scaffolds are ideal platforms to organize chromophores the interesting point due to energy transfer is to introduce another acceptors in well-defined interchromophore distance from pyrene. This approach can be done by introducing complementary strand which contains appropriate chromophore in different position. Such a supramolecular complexes were investigated with different spectroscopic methods to prove efficient harvesting and transport of energy to the acceptor core through the intermediate donor-acceptor pyrene derivative.



1. Dutta, P. K., Varghese R., Nangreave J., Lin S., Yan H., Liu Y. *J. Am. Chem. Soc.*, 133, p. 11985-11993, 2011.
2. Winiger C. B., Li S., Kumar G.R., Langenegger S. M., Häner R., *Chem. Int. Ed.*, 53, p. 13609-13613, 2014.